

INTERNATIONAL SEARCH REPORT

International Application No
PC 1, 132004/051984

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H02M3/07 H02M3/158

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/008567 A1 (HENRY GEORGE C) 24 January 2002 (2002-01-24) paragraphs '0078! - '0082!, '0143!, '0144!; figures 4,16	1-11
A	PATENT ABSTRACTS OF JAPAN vol. 0160, no. 18 (E-1155), 17 January 1992 (1992-01-17) -& JP 03 235657 A (SUMITOMO METAL IND LTD), 21 October 1991 (1991-10-21) abstract; figures 1-7	1-11
A	EP 0 766 371 A (TOKYO SHIBAURA ELECTRIC CO) 2 April 1997 (1997-04-02) abstract; figures 4,7	1-11
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *G* document member of the same patent family

Date of the actual completion of the international search

11 January 2005

Date of mailing of the international search report

24/01/2005

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Inter national Application No
PCT/GB2004/051984

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 302 619 A (COUTANT LAMBDA LIMITED) 22 January 1997 (1997-01-22) cited in the application the whole document -----	1-11

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: -

Present claims 1 to 11 relate to an apparatus/method defined by reference to a desirable broad formulated characteristic, namely "capacitive mode and inductive mode".

The claims cover all apparatus/methods having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such apparatus/methods. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the apparatus/method by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the apparatus/methods as defined by figures 1 to 4 and corresponding passages of the description. Accordingly, "capacitive mode" should have the meaning of "operating as a charge pump circuit" and "inductive mode" the meaning of "operating as a boost circuit using a sub-set of the switches used in the capacitive mode".

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/051984

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002008567	A1	24-01-2002	US 2004080361 A1	29-04-2004
			US 2003169097 A1	11-09-2003
			US 2002008499 A1	24-01-2002
			US 2002027467 A1	07-03-2002
JP 03235657	A	21-10-1991	NONE	
EP 0766371	A	02-04-1997	JP 9093909 A	04-04-1997
			JP 9098565 A	08-04-1997
			DE 69633847 D1	23-12-2004
			EP 0766371 A2	02-04-1997
			KR 244103 B1	01-02-2000
			US 5744943 A	28-04-1998
GB 2302619	A	22-01-1997	NONE	